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CLAIMS

- 1. A nickel alloy composition comprising about 4 to about 8 wt% Cr, about 5 to about 6.5 wt% Al, about 2 to 5 about 6 wt% Co, about 4 to about 8 wt% Ta, about 3 to about 5 wt% Re, about 0.1 to about 0.5 wt% Hf, about 0.04 to about 0.1 wt% C, about 0.05 to about 0.3 wt% Si, and about 0.003 to about 0.01 wt% B, with at least the major part of the balance being nickel.
 - 2. A nickel alloy composition as claimed in claim 1, substantially excluding at least one of Mo, Ti and V.
- A nickel alloy composition as claimed in claim 1, substantially excluding all of Mo, Ti, V and Nb.
- A nickel alloy composition as claimed in claim 1, 2 or 3, further including one or more element selected from up to about 5 wt% W, up to about 5 wt% Pt, about
 0.003 to about 0.008 wt% La, and about 0.003 to about 0.008 wt% Y.
 - 5. A nickel alloy composition as claimed in claim 1, 2, 3 or 4, wherein the composition consists essentially of Cr, Al, Co, Ta, Re, Hf, C, Si, B and optionally one or more of W, Pt, La and Y, in the amounts stated in the said preceding claim, the balance being nickel.
- 6. A nickel alloy composition, substantially as defined by the nominal composition: Cr 4.5 wt%; Al 6 wt%; Co 4 wt%; Ta 6 wt%; Re 4 wt%; Hf 0.15 wt%; C 0.05 wt%; Si 0.1 wt%; B 0.005 wt%; W 2 wt%; La 0.003-0.005 wt%; and Y 0.003-0.005 wt%; the remainder being nickel.
- 35 7. A method for forming a blade tip of a gas turbine blade, particularly a blade tip of a gas turbine

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propulsion engine, the method comprising applying a nickel alloy composition, comprising about 4 to about 8 wt% Cr, about 5 to about 6.5 wt% Al, about 2 to about 6 wt% Co, about 4 to about 8 wt% Ta, about 3 to about 5 wt% Re, about 0.1 to about 0.5 wt% Hf, about 0.04 to about 0.1 wt% C, about 0.05 to about 0.3 wt% Si, and about 0.003 to about 0.01 wt% B, with at least the major part of the balance being nickel, to the tip of the gas turbine blade.

- 8. A method for repairing a metal article, the method comprising applying a nickel alloy composition, comprising about 4 to about 8 wt% Cr, about 5 to about 6.5 wt% Al, about 2 to about 6 wt% Co, about 4 to about 8 wt% Ta, about 3 to about 5 wt% Re, about 0.1 to about 0.5 wt% Hf, about 0.04 to about 0.½ wt% C, about 0.05 to about 0.3 wt% Si, and about 0.003 to about 0.01 wt% B, with at least the major part of the balance being nickel, to a damaged portion of the metal article to repair the same.
 - A method as claimed in claim 8, wherein the metal article is a cast metal turbine component.
- 5 10. A method as claimed in claim 9, wherein the cast metal turbine component is a turbine blade, a turbine shroud segment or a nozzle guide vane.
- 11. A method as claimed in claim 7 or 8, wherein the application of the nickel alloy composition is carried out by a laser cladding or weld deposition process.
- 12. A method for forming a blade tip or blade tip structure of a gas turbine blade, or for forming a repair structure to repair a cast metal turbine component, the method comprising laser cladding or weld

depositing a nickel alloy composition, comprising about 4 to about 8 wt% Cr, about 5 to about 6.5 wt% Al, about 2 to about 6 wt% Co, about 4 to about 8 wt% Ta, about 3 to about 5 wt% Re, about 0.1 to about 0.5 wt% Hf, about 0.04 to about 0.1 wt% C, about 0.05 to about 0.3 wt% Si, and about 0.003 to about 0.01 wt% B, with at least the major part of the balance being nickel, to the tip of the gas turbine blade or to the cast metal turbine component, to a depth in excess of the desired blade tip or structure, and subsequently machining the nickel alloy composition to reduce the depth thereof to form the desired blade tip or structure.

- 13. A method as claimed in claim 12, wherein the nickel alloy composition is applied by laser cladding.
 - 14. A method as claimed in claim 12 or 13, wherein the blade tip comprises a squealer.

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